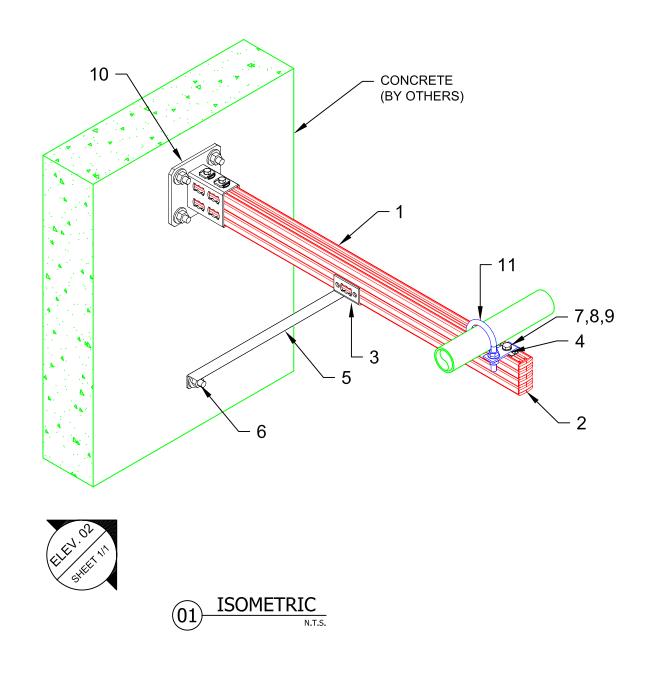
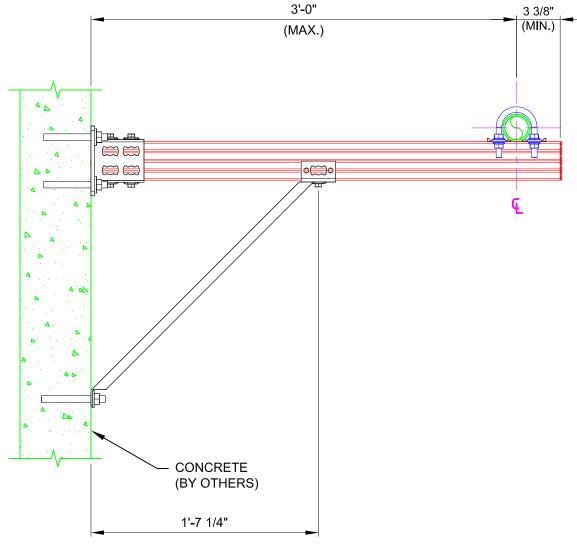


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ELEVATION

No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - Ib
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10' B2B	1	AS REQ'D	2007087	-
2	4	EA	CHANNEL END CAP MEK RED	50	1	244886	-5
3	5	EA	CHANNEL CONNECTOR MQN-HDG PLUS	50	1	387779	-
4	2	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	-
5	1	EA	ANGLE BRACE MQK-SL-R	10	1	304010	-
6	5	EA	USE KB-TZ SS AS APPROPRIATE	VARIES	VARIES	VARIES	1/2"-40
7	2	EA	WING NUT MQM-F3/8"-F	25	1	304136	-
8	2	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
9	2	EA	WASHER 3/8" SS316	200	1	411780	-
10	1	FΔ	MOP-82-4	VARIES	VARIES	SPECIAL	-

VARIES VARIES SPECIAL

EA U-BOLT

NOTE(S)

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):

DEAD LOAD (VERTICAL) = 120lb.

LATERAL LOADS

PARALLEL TO PIPE = 50lb.

PERPENDICULAR TO PIPE = 100lb.

- b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
- c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
- d. BUILDING CODE: IBC 2006 / 2009 / 2012
- e. CORROSION RESISTANCE REQD.: HDG
- ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- 6. MAX. 1 PIPE PER SUPPORT.
- 7. ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR.

TYPICAL DETAIL TYPE:

PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

REVISIONS:

BRACED CANTILEVER

DESIGNED BY:	REVIEWED BY:
KL	AJV
DRAWN BY:	ISSUE DATE:
HAM	09 DEC 14

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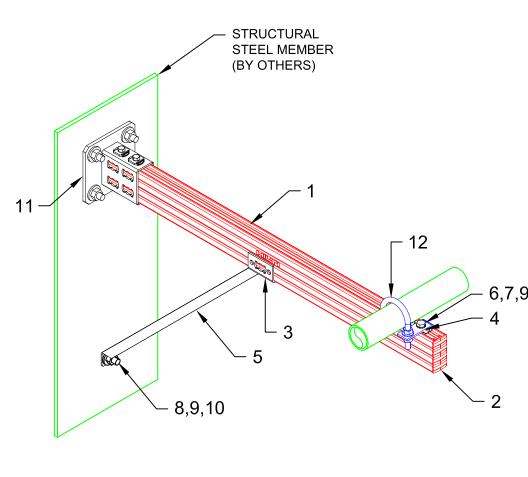
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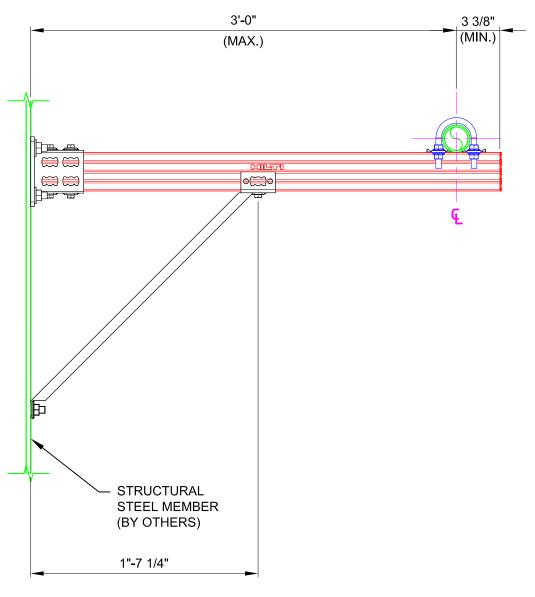








No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - Ib
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10' B2B	1	AS REQ'D	2007087	
2	2	EA	CHANNEL END CAP MEK RED	50	1	244886	-
3	5	EA	CHANNEL CONNECTOR MQN-HDG PLUS	50	1	387779	-
4	2	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	-
5	1	EA	ANGLE BRACE MQK-SL-R	10	1	304010	
6	2	EA	WING NUT MQM-F3/8"-F	25	1	304136	-
7	2	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
8	5	EA	HEX NUT STANDARD 3/8" SS316	100	1	411775	2.00
9	7	EA	WASHER 3/8" SS316	200	1	411780	
10	5	EA	X-BTW10-24-6 SN12-R	100	1	377076	6
11	1	EA	MQP-82-4	VARIES	VARIES	SPECIAL	1963
12	1	EA	U-BOLT	VARIES	VARIES	SPECIAL	-





- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.): DEAD LOAD (VERTICAL) = 120lb. LATERAL LOADS
 - PARALLEL TO PIPE = 50lb.
 - PERPENDICULAR TO PIPE = 100lb.
 - b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
 - c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.

 - d. BUILDING CODE: IBC 2006 / 2009 / 2012
 - e. CORROSION RESISTANCE REQD.: HDG
- ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- MAX. 1 PIPE PER SUPPORT.
- ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD.



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TYPICAL DETAIL TYPE:

PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

BRACED CANTILEVER

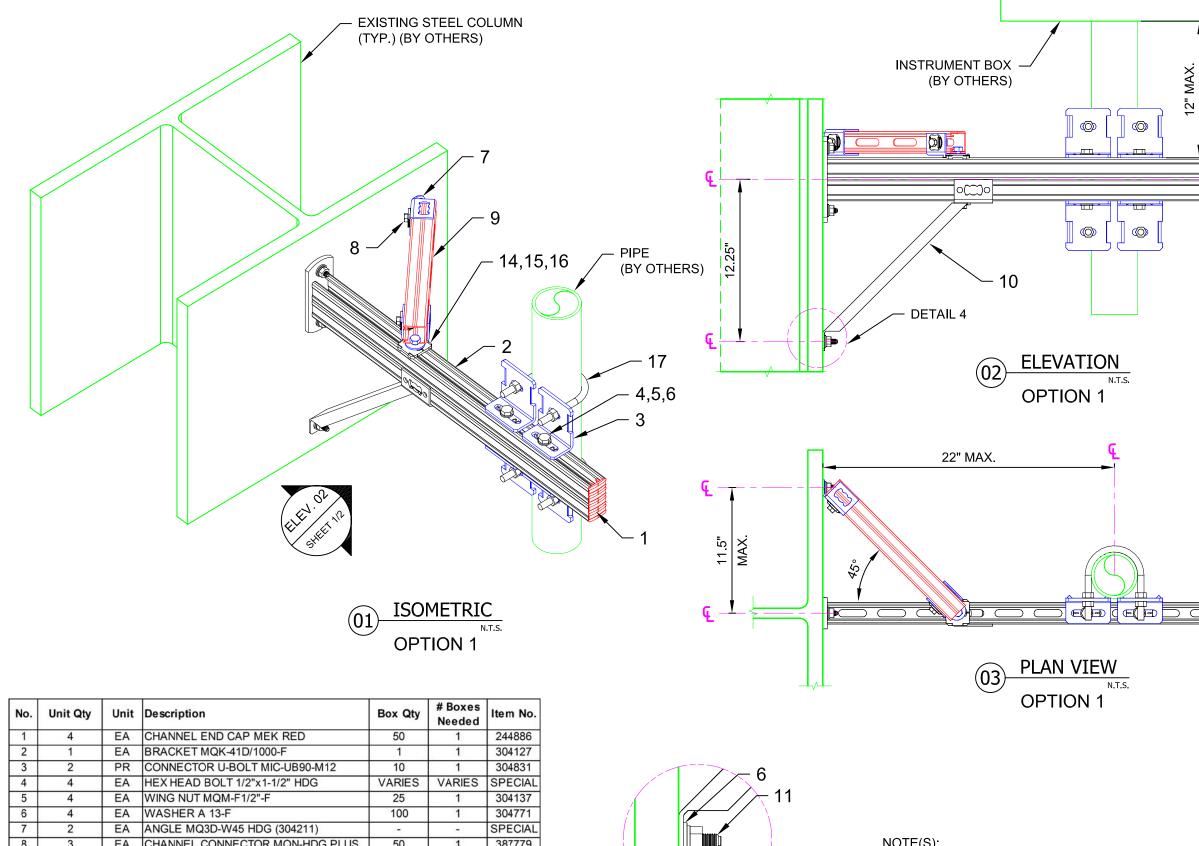
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KL	AJV
DRAWN BY:	ISSUE DATE:
HAM	09 DEC 14

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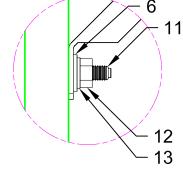
TYPICAL DETAIL NOMENCLATURE:

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DRAWING NUMBER:	SHEET:
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					Needed	
1	4	EA	CHANNEL END CAP MEK RED	50	1	244886
2	1	EA	BRACKET MQK-41D/1000-F	1	1	304127
3	2	PR	CONNECTOR U-BOLT MIC-UB90-M12	10	1	304831
4	4	EA	HEX HEAD BOLT 1/2"x1-1/2" HDG	VARIES	VARIES	SPECIAL
5	4	EA	WING NUT MQM-F1/2"-F	25	1	304137
6	4	EA	WASHER A 13-F	100	1	304771
7	2	EA	ANGLE MQ3D-W45 HDG (304211)	-	-	SPECIAL
8	3	EA	CHANNEL CONNECTOR MQN-HDG PLUS	50	1	387779
9	AS REQ'D	EA	STRUT HS-158-12/HDG 10'	1	AS REQ'D	407570
10	1	EA	ANGLE BRACE MQK-SK-F	10	1	304129
11	4	EA	X-BTW10-24-6 SN12-R	100	1	377076
12	4	EA	HEX NUT STANDARD 3/8" SS316	100	1	411775
13	4	EA	WASHER 3/8" SS316	200	1	411780
14	1	EA	BASE PLATE MQZ-F3/8"-F	20	1	304200
15	1	EA	HEX HEAD BOLT 3/8"x1-1/2" HDG	VARIES	VARIES	SPECIAL
16	1	EA	WING NUT MQM-F3/8"	50	1	377882
17	1	EA	U-BOLT	VARIES	VARIES	SPECIAL



ISOMETRIC

NOTE(S):

- PRELIMINARY NOT FOR CONSTRUCTION
- DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):
 - DL: 50lb / PIPE
 - b. LATERAL LOADS 20lb.
 - c. CORROSION RESISTANCE REQD.: HDG
- ALL LOADS ASSUMED TO ACT AT TOP OF PIPE(S), U.N.O.
- REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- VERIFY CAPACITY OF BASE MATERIALS BY OTHERS.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the

TYPICAL DETAIL TYPE:

PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

BRACED CANTILEVER

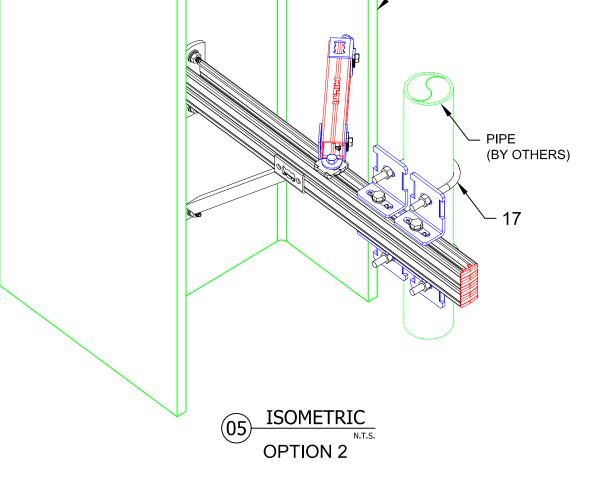
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KL	AJV
DRAWN BY:	ISSUE DATE:
HAM	09 DEC 14

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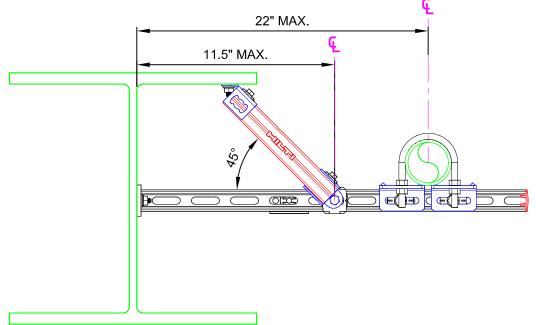
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EXISTING STEEL COLUMN (TYP.) (BY OTHERS)





NOTE(S):

1. REFER TO SHEET 1 FOR APPLICABLE NOTE(S).



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR

TYPICAL DETAIL TYPE:

REVISIONS:

PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

BRACED CANTILEVER

DESIGNED BY:	REVIEWED BY:
KL	AJV
DRAWN BY:	ISSUE DATE:
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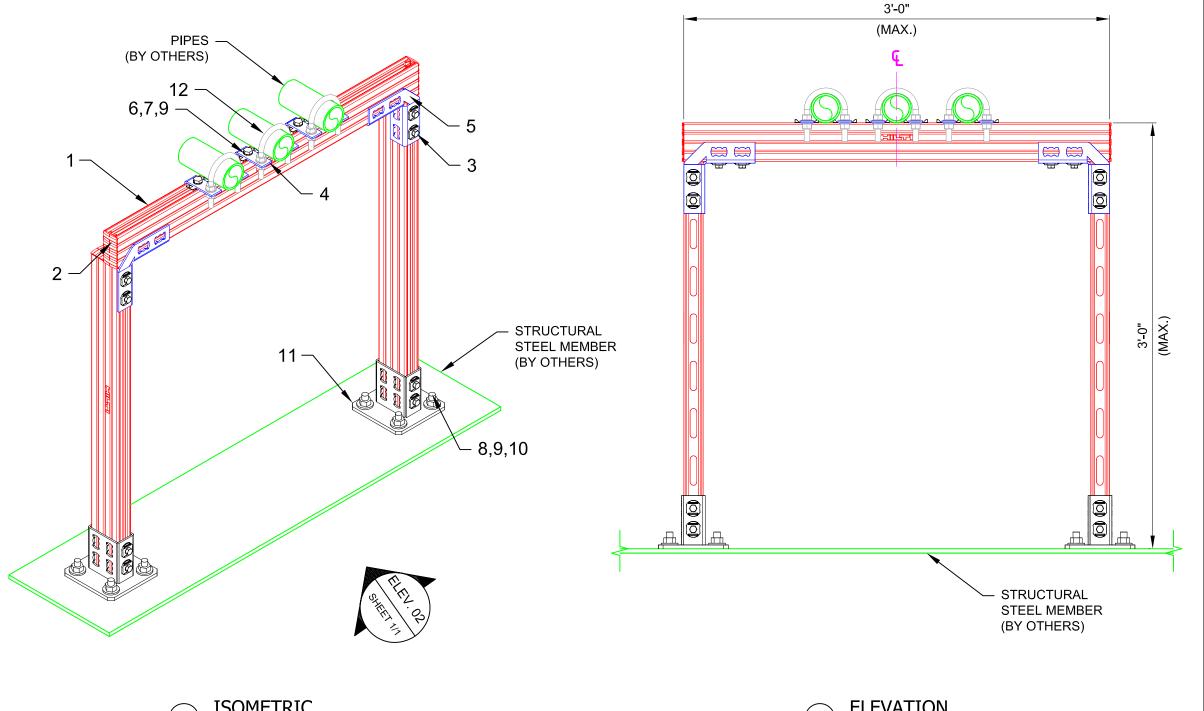
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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - lb
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10' B2B	1	AS REQ'D	2007087	-
2	8	EA	CHANNEL END CAP MEK RED	50	1	244886	-
3	16	EA	CHANNEL CONNECTOR MQN-HDG PLUS	50	1	387779	30
4	6	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	-
5	2	EA	8-HOLE ANGLE MQW-8/90-F	10		304175	-
6	6	EA	WING NUT MQM-F3/8"-F	25	1	304136	-
7	6	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
8	8	EA	HEX NUT STANDARD 3/8" SS316	100	1	411775	-
9	14	EA	WASHER 3/8" SS316	200	1	411780	-
10	8	EA	X-BTW10-24-6 SN12-R	100	1	377076	6
11	2	EA	MQP-82-4	VARIES	VARIES	SPECIAL	-
12	3	EA	U-BOLT	VARIES	VARIES	SPECIAL	

IOTE(S)

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):

 DEAD LOAD (VERTICAL) = 200lb.

 LATERAL LOADS

 PARALLEL TO PIPE = 30lb.

PERPENDICULAR TO PIPE = 100lb.

- b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
- c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
- d. BUILDING CODE: IBC 2006 / 2009 / 2012
- e. CORROSION RESISTANCE REQD.: HDG
- 3. ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- 4. REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- 5. E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- 6. MAX. 3 PIPE PER SUPPORT SYMMETRICAL ABOUT THE CENTER LINE..
- 7. ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD.



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TYPICAL DETAIL TYPE:

PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

GOALPOST - SINGLE

DESIGNED BY: REVIEWED BY:	
KL AJV	
DRAWN BY: ISSUE DATE:	
HAM 09 DEC 14	

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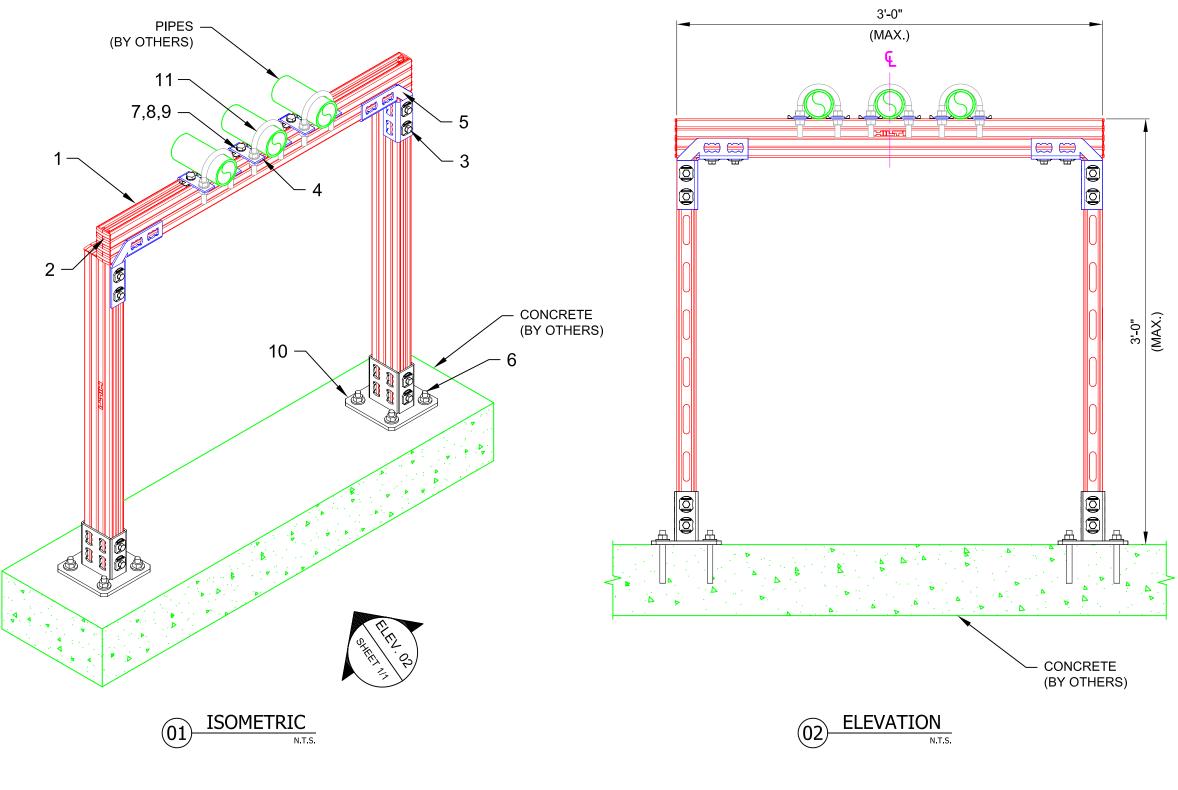
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TYPICAL DETAIL NOMENCLATURE:

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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - Ib
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10' B2B	1	AS REQ'D	2007087	
2	8	EA	CHANNEL END CAP MEK RED	50	1	244886	
3	16	EA	CHANNEL CONNECTOR MQN-HDG PLUS	50	1	387779	30
4	6	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	-
5	2	EA	8-HOLE ANGLE MQW-8/90-F	10		304175	
6	8	EA	USE KB-TZ SS AS APPROPRIATE	VARIES	VARIES	VARIES	1/2"-40
7	6	EA	WING NUT MQM-F3/8"-F	25	1	304136	
8	6	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
9	6	EA	WASHER 3/8" SS316	200	1	411780	
10	2	EA	MQP-82-4	VARIES	VARIES	SPECIAL	980
11	3	FA	U-BOLT	VARIES	VARIES	SPECIAL	17-27

IOTE(S)

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):

DEAD LOAD (VERTICAL) = 200lb.

LATERAL LOADS

PARALLEL TO PIPE = 30lb.

PERPENDICULAR TO PIPE = 100lb.

- b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
- c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
- d. BUILDING CODE: IBC 2006 / 2009 / 2012
- e. CORROSION RESISTANCE REQD.: HDG
- ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- 4. REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- 5. E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- 6. MAX. 3 PIPE PER SUPPORT SYMMETRICAL ABOUT THE CENTER LINE.
- 7. ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR.

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PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

GOALPOST - SINGLE

DESIGNED BY: REVIEWED BY:	
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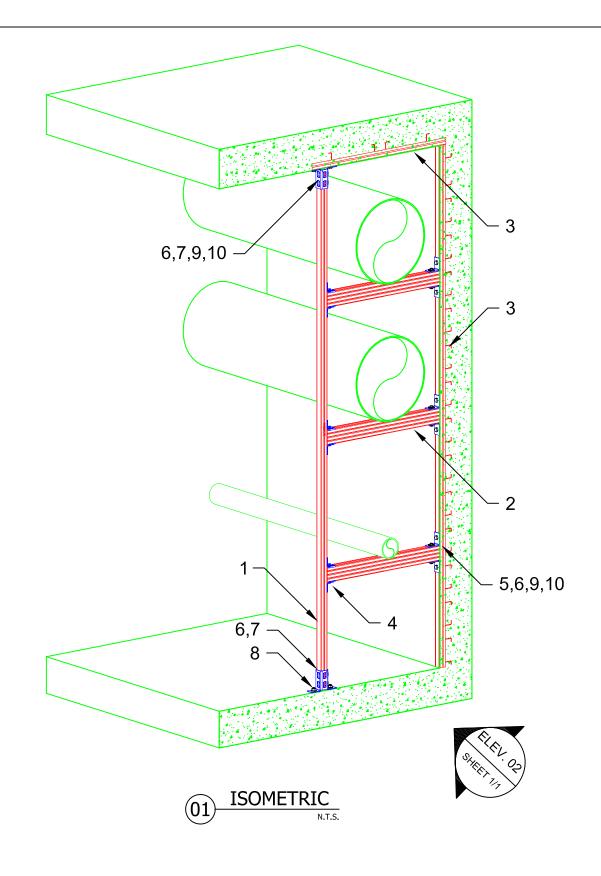
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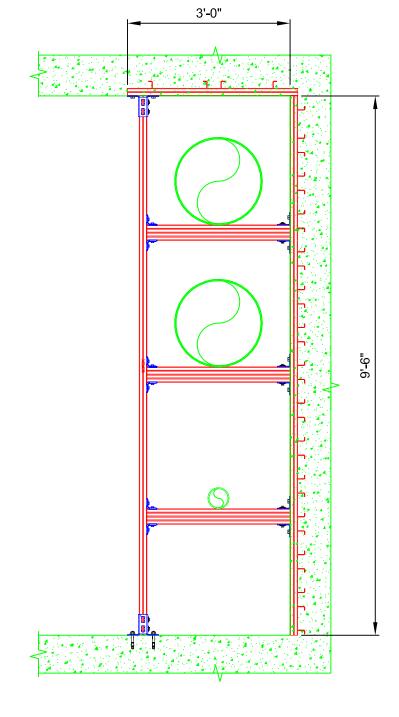
TYPICAL DETAIL NOMENCLATURE:

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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.
1	AS REQ'D	EA	STRUT HS-158-12/PGS 10' SOLID	1	AS REQ'D	407561
2	AS REQ'D	EA	STRUT HS-158-12/PG 10' B2B	1	AS REQ'D	2007082
3	AS REQ'D	EA	CAST IN STRUT 1 5/8 12ga	VARIES	AS REQ'D	3448648
4	6	EA	2-HOLE ANGLE MQW-Q2	20	1	369655
5	6	EA	BASE MQP-1/1	20	1	369646
6	10	EA	CHANNEL CONNECTOR MQN	50	1	369623
7	2	EA	BASE MQV-2/2 D-14	10	1	369639
8	2	EA	STUD ANCHOR KB-TZ 1/2X3 3/4	20	1	387512
9	8	EA	HEX HEAD BOLT 1/2-1 1/4 ZINC 50/BOX	50	1	411767
10	8	EA	1/2" CHANNEL NUT/NO SPRING 100/BOX	100	1	311938



- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. NO LOADS CONSIDERED CONCEPT ONLY
 - b. LATERAL LOADS NOT CONSIDERED
 - c. BUILDING CODE: NOT SPECIFIED
- d. CORROSION RESISTANCE REQD.: NOT SPECIFIED
- ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O. REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the

PROJECT NAME:

PIPE SUPPORT

SERVICE REQUEST DESCRIPTION:

GOALPOST - MULTI

DESIGNED BY:	REVIEWED BY:
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DRAWN BY:	ISSUE DATE:
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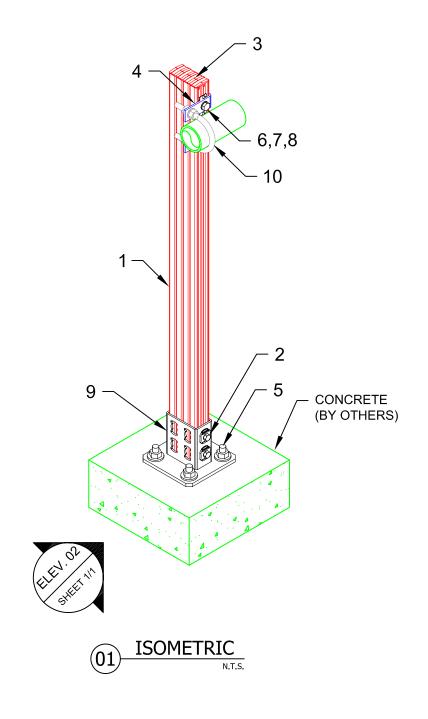
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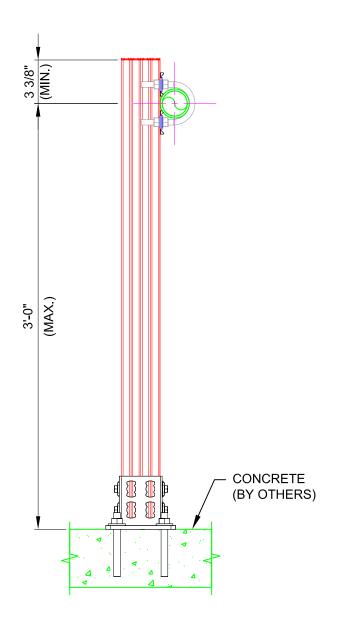
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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - Ib
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10' B2B	1	AS REQ'D	2007087	7.5
2	4	EA	CHANNEL CONNECTOR MQN-HDG PLUS	50	1	387779	7.5
3	2	EA	CHANNEL END CAP MEK RED	50	1	244886	(=)
4	2	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	(*)
5	4	EA	USE KB-TZ SS AS APPROPRIATE	VARIES	VARIES	VARIES	1/2"-40
6	2	EA	WING NUT MQM-F3/8"-F	25	1	304136	-
7	2	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
8	2	EA	WASHER 3/8" SS316	200	1	411780	
9	1	EA	MQP-82-4	VARIES	VARIES	SPECIAL	

VARIES VARIES SPECIAL

EA U-BOLT

NOTE(S)

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):

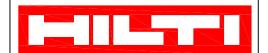
DEAD LOAD (VERTICAL) = 200lb. LATERAL LOADS

LATERAL LUAD

PARALLEL TO PIPE = 50lb.

PERPENDICULAR TO PIPE = 0lb.

- b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
- c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
- d. BUILDING CODE: NOT SPECIFIED
- e. CORROSION RESISTANCE REQD.: HDG
- 3. ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- . REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- 5. E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- 6. MAX. 1 PIPE PER SUPPORT.
- 7. ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR.

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PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

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DESIGNED BY:	REVIEWED BY:
KL	AJV
DRAWN BY:	ISSUE DATE:
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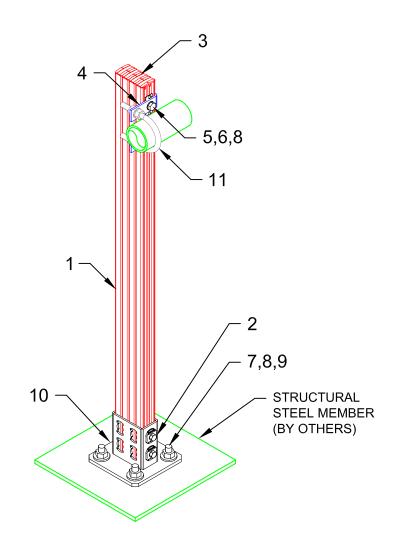
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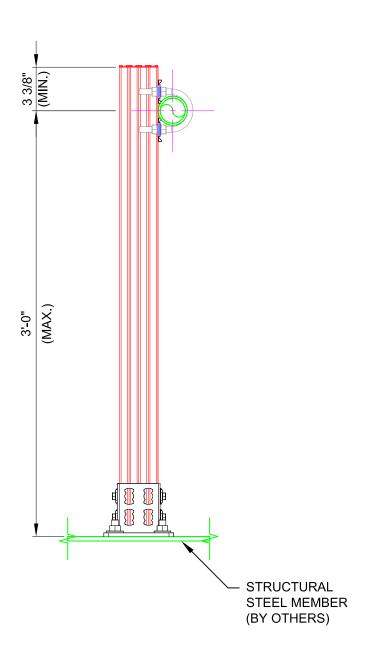
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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - Ib
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10' B2B	1	AS REQ'D	2007087	
2	4	EA	CHANNEL CONNECTOR MQN-HDG PLUS	50	1	387779	
3	2	EA	CHANNEL END CAP MEK RED	50	1	244886	
4	2	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	
5	2	EA	WING NUT MQM-F3/8"-F	25	1	304136	
6	2	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
7	4	EA	HEX NUT STANDARD 3/8" SS316	100	1	411775	-
8	6	EA	WASHER 3/8" SS316	200	1	411780	
9	4	EA	X-BTW10-24-6 SN12-R	100	1	377076	6
10	1	EA	MQP-82-4	VARIES	VARIES	SPECIAL	-
11	1	EA	U-BOLT	VARIES	VARIES	SPECIAL	-





- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.): DEAD LOAD (VERTICAL) = 200lb. LATERAL LOADS

PARALLEL TO PIPE = 50lb.

- PERPENDICULAR TO PIPE = 0lb.
- b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
- c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
- d. BUILDING CODE: NOT SPECIFIED
- e. CORROSION RESISTANCE REQD.: HDG
- ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- MAX. 1 PIPE PER SUPPORT.
- ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR

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TYPICAL DETAIL DESCRIPTION:

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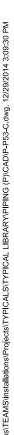
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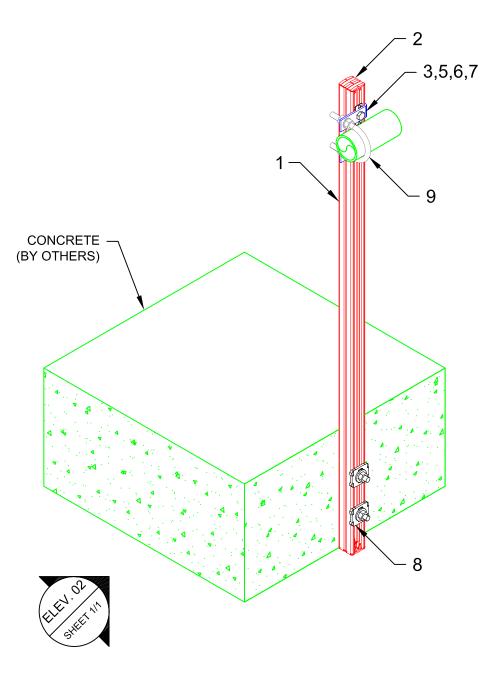
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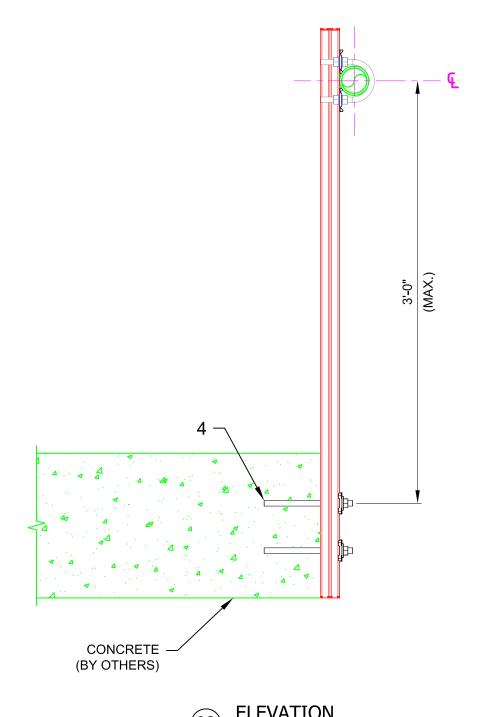
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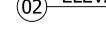






No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - lbs
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10'	1	AS REQD	407570	-
2	4	EA	CHANNEL END CAP MEK RED	50	1	244886	
3	2	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	-
4	2	EA	USE KB-TZ SS AS APPROPRIATE	VARIES	VARIES	VARIES	40
5	2	EA	WING NUT MQM-F3/8"-F	25	1	304136	
6	2	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
7	2	EA	WASHER 3/8" SS316	200	1	411780	-
8	2	EA	BASE PLATE MQZ-F1/2"-F	20	1	304201	-
9	1	EA	U-BOLT	VARIES	VARIES	SPECIAL	





NOTE(S)

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):

DEAD LOAD (VERTICAL) = 200lb.

LATERAL LOADS

PARALLEL TO PIPE = 50lb.

PERPENDICULAR TO PIPE = 0lb.

- b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
- c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
- d. BUILDING CODE: NOT SPECIFIED
- e. CORROSION RESISTANCE REQD.: HDG
- ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- 4. REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- 5. E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- 6. MAX. 1 PIPE PER SUPPORT.
- 7. ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD.



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TYPICAL DETAIL TYPE:

PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

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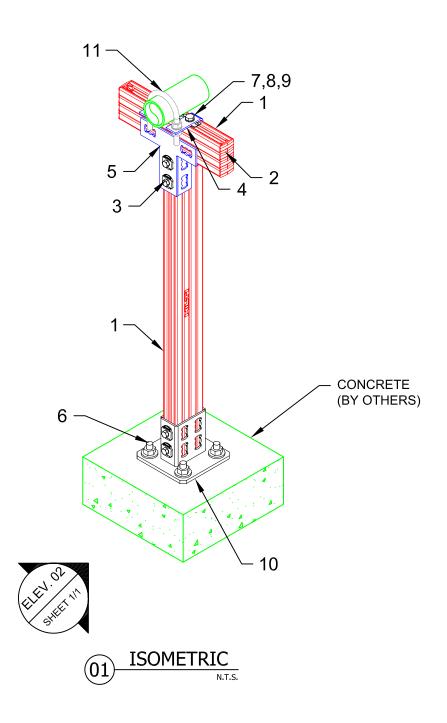
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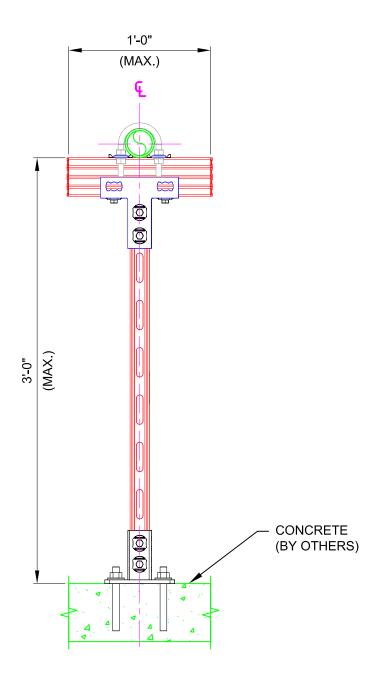
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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - Ib
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10' B2B	1	AS REQ'D	2007087	-
2	2	EA	CHANNEL END CAP MEK RED	50	1	244886	-
3	8	EA	CHANNEL CONNECTOR MQN-HDG PLUS	50	1	387779	30
4	2	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	-
5	1	EA	CHANNEL TIE MQV-3/2D-F	10	1	304152	-
6	4	EA	USE KB-TZ SS AS APPROPRIATE	VARIES	VARIES	VARIES	1/2"-40
7	2	EA	WING NUT MQM-F3/8"-F	25	1	304136	-
8	2	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
9	2	EA	WASHER 3/8" SS316	200	1	411780	-
10	1	EA	MQP-82-4	VARIES	VARIES	SPECIAL	-
11	1	EA	U-BOLT	VARIES	VARIES	SPECIAL	





NOTE(S)

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):

DEAD LOAD (VERTICAL) = 200lb.

LATERAL LOADS

PARALLEL TO PIPE = 18lb.

PERPENDICULAR TO PIPE = 50lb.

- b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
- c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
- d. BUILDING CODE: NOT SPECIFIED
- e. CORROSION RESISTANCE REQD.: HDG
- ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- 5. E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- 6. MAX. 1 PIPE PER SUPPORT CENTER ON THE MQK.
- ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR.

TYPICAL DETAIL TYPE:

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TYPICAL DETAIL DESCRIPTION:

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DESIGNED BY:	REVIEWED BY:
KL	AJV
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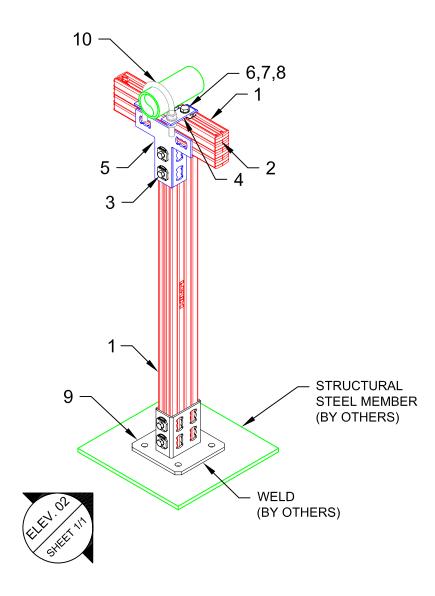
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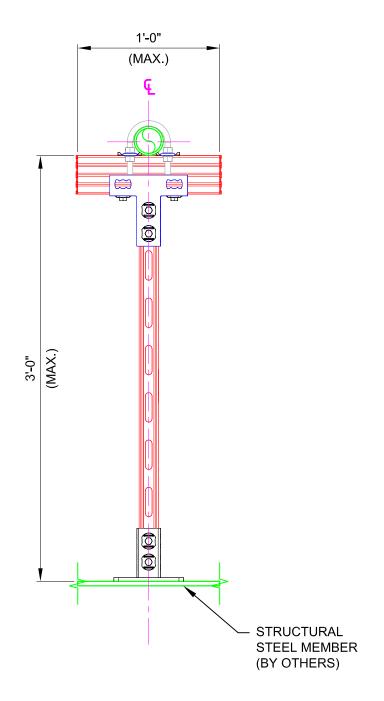
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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - Ib
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10' B2B	1	AS REQ'D	2007087	-
2	2	EA	CHANNEL END CAP MEK RED	50	1	244886	-
3	8	EA	CHANNEL CONNECTOR MQN-HDG PLUS	50	1	387779	30
4	2	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	-
5	1	EA	CHANNEL TIE MQV-3/2D-F	10	1	304152	-
6	2	EA	WING NUT MQM-F3/8"-F	25	1	304136	-
7	2	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
8	2	EA	WASHER 3/8" SS316	200	1	411780	-
9	1	EA	MQP-82-4	VARIES	VARIES	SPECIAL	-
10	1	EA	U-BOLT	VARIES	VARIES	SPECIAL	-

ISOMETRIC





NOTE(S)

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):

DEAD LOAD (VERTICAL) = 200lb.

LATERAL LOADS

PARALLEL TO PIPE = 50lb.

PERPENDICULAR TO PIPE = 50lb.

- b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
- c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
- d. BUILDING CODE:NOT SPECIFIED
- e. CORROSION RESISTANCE REQD.: HDG
- ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- 4. REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- 5. E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- 6. MAX. 1 PIPE PER SUPPORT CENTER ON THE MQK.
- ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR.

TYPICAL DETAIL TYPE:

PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

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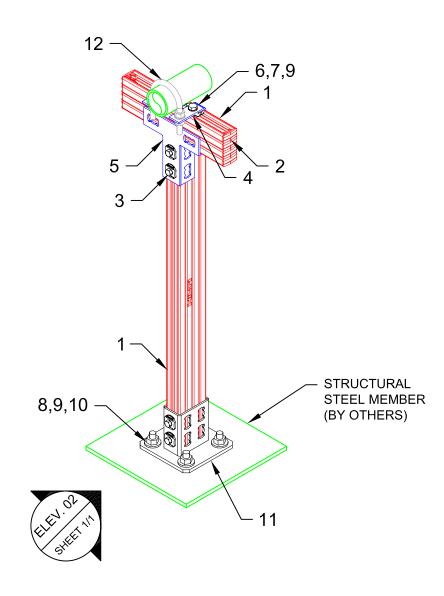
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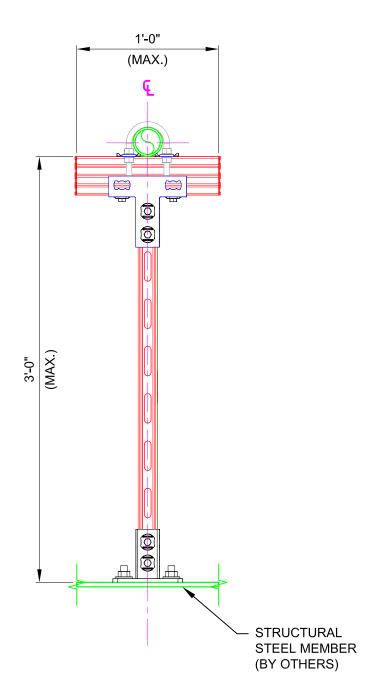
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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - Ib
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10' B2B	1	AS REQ'D	2007087	-
2	2	EA	CHANNEL END CAP MEK RED	50	1	244886	-
3	8	EA	CHANNEL CONNECTOR MQN-HDG PLUS	50	1	387779	30
4	2	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	-
5	1	EA	CHANNEL TIE MQV-3/2D-F	10	1	304152	-
6	2	EA	WING NUT MQM-F3/8"-F	25	1	304136	-
7	2	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
8	4	EA	HEX NUT STANDARD 3/8" SS316	100	1	411775	-
9	6	EA	WASHER 3/8" SS316	200	1	411780	-
10	4	EA	X-BTW10-24-6 SN12-R	100	1	377076	6
11	1	EA	MQP-82-4	VARIES	VARIES	SPECIAL	5
12	1	EA	U-BOLT	VARIES	VARIES	SPECIAL	-

ISOMETRIC





NOTE(S)

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):

DEAD LOAD (VERTICAL) = 200lb.

LATERAL LOADS

PARALLEL TO PIPE = 18lb.

PERPENDICULAR TO PIPE = 50lb.

- b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
- c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
- d. BUILDING CODE: NOT SPECIFIED
- e. CORROSION RESISTANCE REQD.: HDG
- ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- 4. REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- 5. E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- 6. MAX. 1 PIPE PER SUPPORT CENTER ON THE MQK.
- ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR.

TYPICAL DETAIL TYPE:

PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

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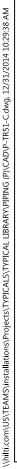
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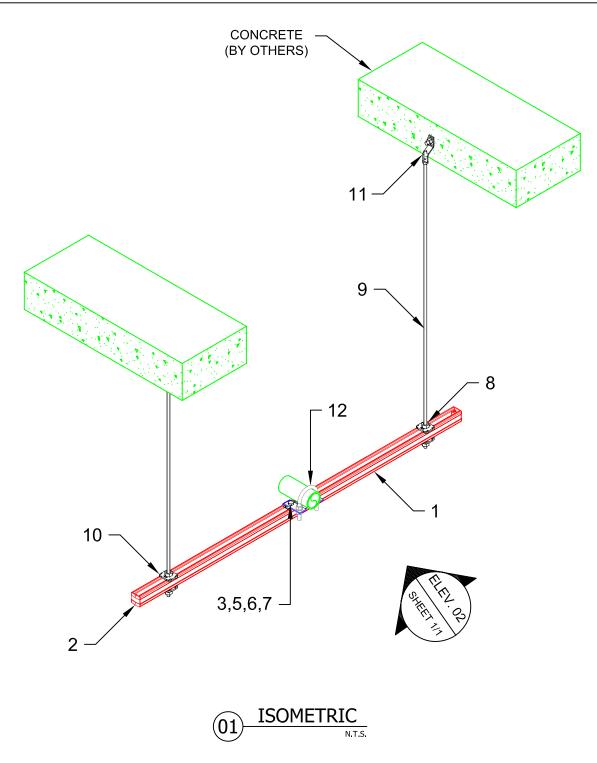
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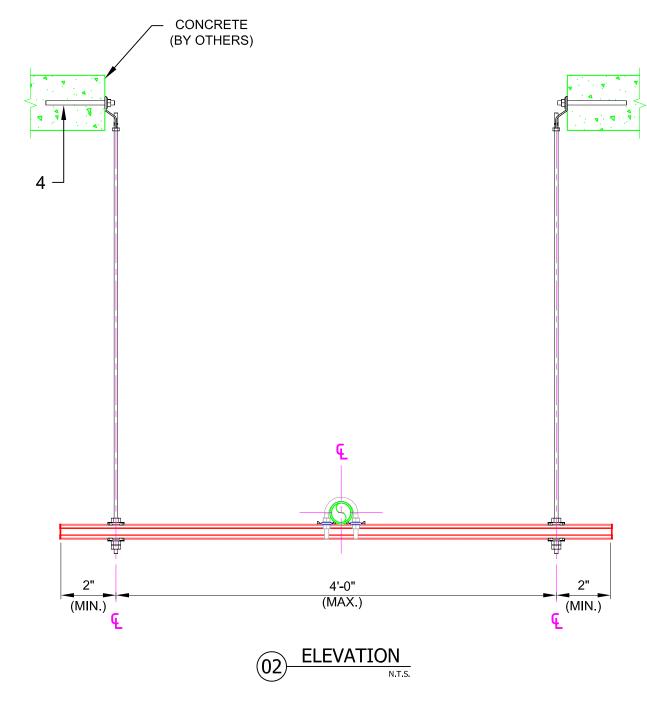
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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - lbs
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10'	1	AS REQD	407570	-
2	4	EA	CHANNEL END CAP MEK RED	50	1	244886	-
3	2	EΑ	MQV-UB-M12 (#304884)	10	1	SPECIAL	-
4	2	EA	USE KB-TZ SS AS APPROPRIATE	VARIES	VARIES	VARIES	40
5	2	EA	WING NUT MQM-F3/8"-F	25	1	304136	-
6	2	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
7	2	EA	WASHER 3/8" SS316	200	1	411780	-
8	10	EA	3/8-16 A 194 HEAVY HEX NUT GR 2-H	1400	1	3509303	19
9	AS REQ'D	EA	3/8"-6' HDG ALL THREAD	25	AS REQ'D	3509150	-
10	4	EA	BASE PLATE MQZ-F3/8"-F	20	1	304200	-
11	2	EA	OFFSET EYE COUPLING 3/8" 250/BOX	250	1	258318	-
12	1	EA	U-BOLT	VARIES	VARIES	SPECIAL	-

NOTE(S):

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. SERVICE LOADS (STATIC, U.N.O.): DEAD LOAD (VERTICAL) = 200lb.

LATERAL LOADS NOT CONSIDERED.

- b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
- c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
- d. BUILDING CODE: NOT SPECIFIED
- e. CORROSION RESISTANCE REQD.: HDG
- 3. ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- 4. REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFORMATION.
- 5. E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- 6. MAX. 1 PIPE PER SUPPORT CENTER ON THE MQK.
- 7. ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD BASED ON CONDITIONS ENCOUNTERED.
- 8. ALL STRUT MATERIAL TO BE ORDERED IN BULK QUANTITIES OR PRE ASSEMBLE PER PROJECT DIRECTIVE.
- 9. ONLY SPECIFY U-BOLT WHEN REQUIRED.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR.

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PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

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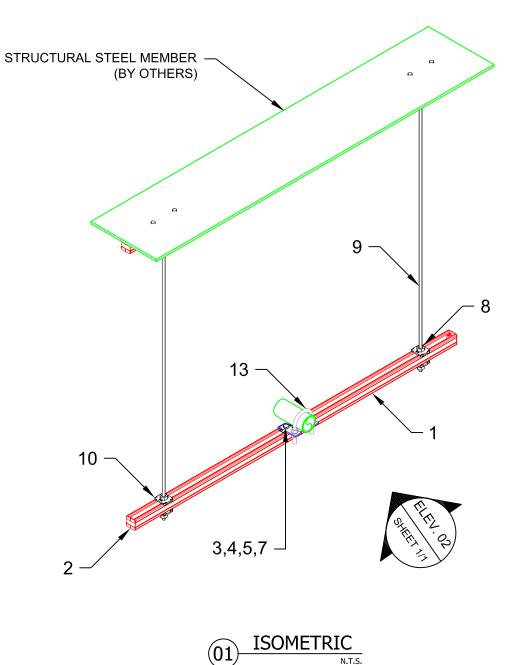
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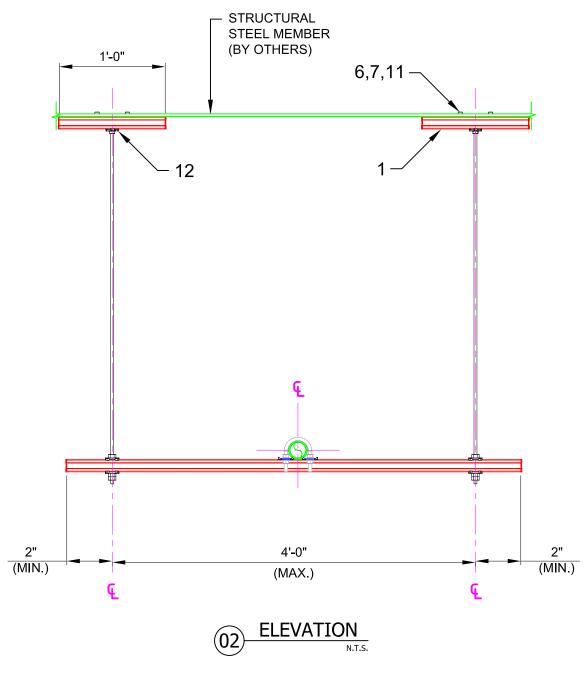
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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.	Torque ft - lbs
1	AS REQ'D	EA	STRUT HS-158-12/HDG 10'	1	AS REQD	407570	-
2	12	EA	CHANNEL END CAP MEK RED	50	1	244886	-
3	2	EA	MQV-UB-M12 (#304884)	10	1	SPECIAL	-
4	2	EA	WING NUT MQM-F3/8"-F	25	1	304136	-
5	2	EA	HEX HEAD BOLT 3/8" x 1-1/4" SS316	50	1	411788	30
6	4	EA	HEX NUT STANDARD 3/8" SS316	100	1	411775	-
7	2	EA	WASHER 3/8" SS316	200	1	411780	-
8	6	EA	3/8-16 A 194 HEAVY HEX NUT GR 2-H	1400	1	3509303	19
9	AS REQ'D	EA	3/8"-6' HDG ALL THREAD	25	AS REQ'D	3509150	-
10	4	EA	BASE PLATE MQZ-F3/8"-F	20	1	304200	-
11	4	EA	X-BTW10-24-6 SN12-R	100	1	377076	6
12	2	EA	SADDLE NUT MQA-F3/8"-F	25	1	304143	-
13	1	EA	U-BOLT	VARIES	VARIES	SPECIAL	-



NOTE(S):

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):
 - DEAD LOAD (VERTICAL) = 200lb.
 - LATERAL LOADS
 - PARALLEL TO PIPE = 0lb.
 - PERPENDICULAR TO PIPE = 0lb.
 - b. LATERAL LOADS ARE WIND OR SEISMIC PER GOVERNING CODE.
 - c. LATERAL LOADS APPLIED AT THE SAME TIME AS DEAD LOAD.
 - d. BUILDING CODE: NOT SPECIFIED
- e. CORROSION RESISTANCE REQD.: HDG
- 3. ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- 4. REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
 - . E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.
- 6. MAX. 1 PIPE PER SUPPORT.
- 7. ATTACHMENT TO BASE MATERIAL ARE CONCEPTUAL ONLY. ATTACHMENT SHALL BE DESIGNED BY THE ENGINEER OF RECORD.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR.

TYPICAL DETAIL TYPE:

PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

TRAPEZE - SINGLE

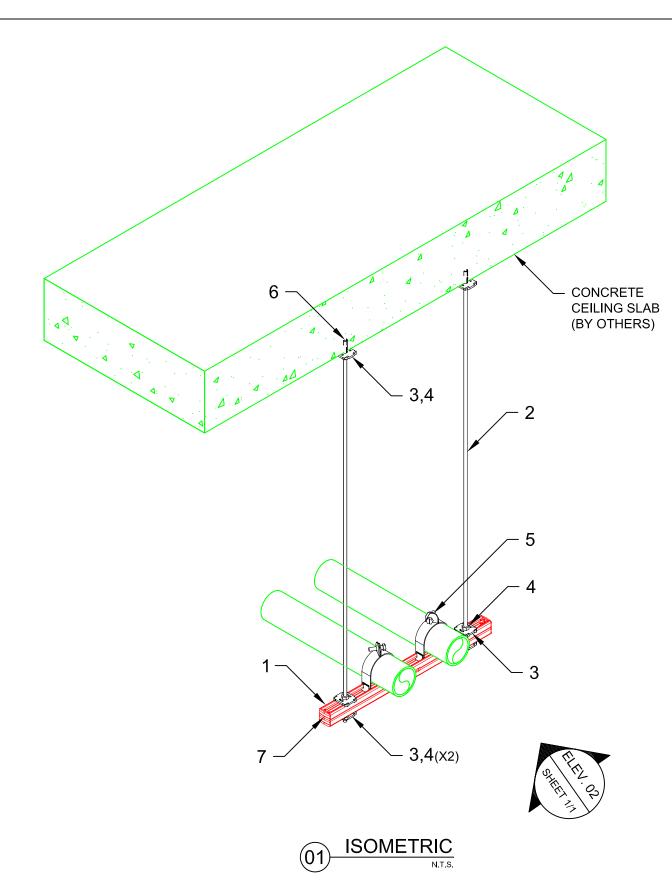
DESIGNED BY:	REVIEWED BY:
KL	AJV
DRAWN BY:	ISSUE DATE:
HAM	03 DEC 14

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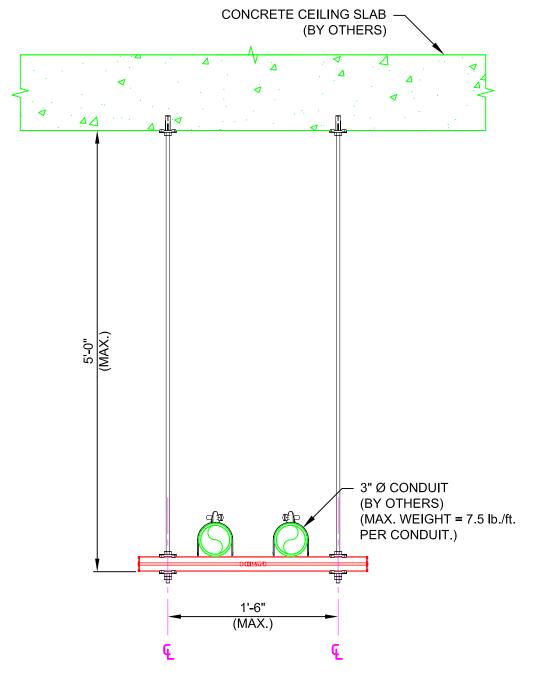
TYPICAL DETAIL NOMENCLATURE:

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DRAWING NUMBER:	SHEET:
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No.	Unit Qty	Unit	Description	Box Qty	# Boxes Needed	Item No.
1	AS REQ'D	EA	STRUT HS-158-12/PG 10'	1	AS REQ'D	407555
2	AS REQ'D	EA	THREADED ROD 3/8"-6' ZINC	25	AS REQ'D	257964
3	6	EA	BASE PLATE MQZ-L3/8"	20	1	370632
4	8	EA	HEX NUT-HEAVY DUTY 3/8"	100	1	411752
5	2	EA	STRUT CLAMP SC 45-RIGID 3"	25	1	2008817
6	2	EA	DROP-IN ANCHOR HDI 3/8	50	1	336426
7	4	EA	CHANNEL END CAP MEK RED	50	1	244886





NOTE(S):

- 1. PRELIMINARY NOT FOR CONSTRUCTION
- 2. DESIGN ASSUMPTIONS:
 - a. DESIGN LOADS (STATIC, U.N.O.):

DL: 7.5 lbs./ft. PER CONDUIT (MAX. NUMBER OF CONDUITS = 2)

- b. LATERAL LOADS NOT CONSIDERED
- c. BUILDING CODE: NOT SPECIFIED
- d. CORROSION RESISTANCE REQD.: NOT SPECIFIED
- e. MAX. SUPPORT SPACING = 8'-0"
- 3. ALL LOADS ASSUMED TO ACT AT CENTER OF PIPE(S), U.N.O.
- 4. REFER TO COMPONENT MANUFACTURER'S IFUS FOR REQUIRED INSTALLATION INFO.
- 5. E.O.R. MUST BE NOTIFIED OF ANY DEVIATIONS FROM EXISTING/ NEW SUBSTRATE CONDITIONS SHOWN HEREIN TO VALIDATE ACCEPTANCE OF THIS HILTI DESIGN PRIOR TO INSTALLATION.



All loading and design criteria supplied by customer is assumed accurate. Only the stated Design Assumptions were considered, and must be verified by the responsible Engineer of Record (EOR). The basis of Hilti component and connection design is the published data in the current Hilti Technical Guide, including material and cross-section properties, allowable load values, factors of safety, methods of calculation, and limiting factors. The EOR must verify suitability for any specific application, and the capacity of the supportive structure to receive the shown configuration and associated reaction loads. Modification to components and/or design may alter performance and must be evaluated by the EOR.

TYPICAL DETAIL TYPE:

PIPE SUPPORT

TYPICAL DETAIL DESCRIPTION:

REVISIONS:

TRAPEZE - SINGLE

DESIGNED BY:	REVIEWED BY:
KL	AJV
DRAWN BY:	ISSUE DATE:
HAM	03 DEC 14

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TYPICAL DETAIL NOMENCLATURE:

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DRAWING NUMBER: SHEET:

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